



Programmable Thermostat 521 User Manual

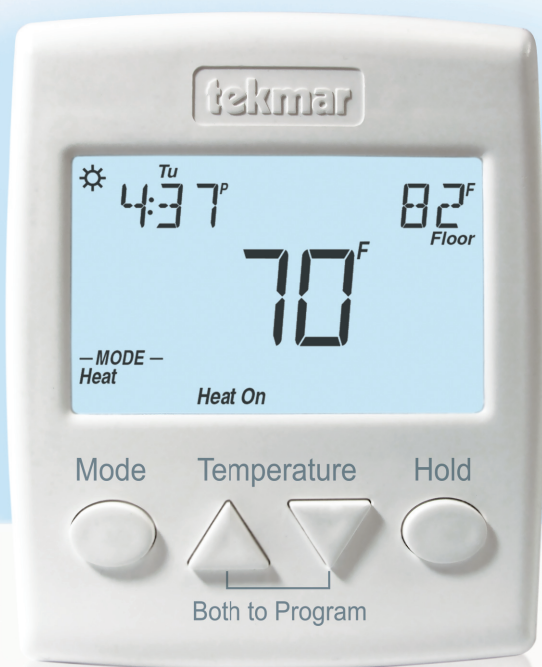


Zoning

521_U

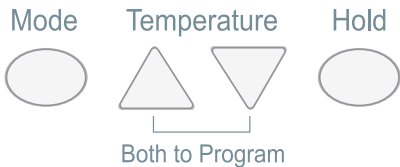
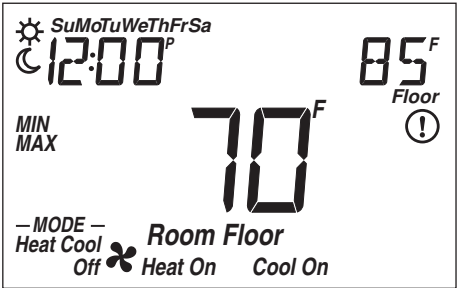
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Replaces: New



This brochure will provide you with the information you need to benefit the most from your tekmar Thermostat. Please visit www.tekmarControls.com for more detailed information on this or any other tekmar product.

User Interface



Display Symbols

This thermostat will display symbols on its screen in order to indicate what mode it is in, what temperature it is operating at, or what equipment it is trying to turn on. This section describes each of those symbols.

<i>Heat On</i>	HEAT ON Heat is turned on.		SUN Schedule operating at the occupied temperature.
<i>Cool On</i>	COOL ON Cooling is turned on.		MOON Schedule operating at the unoccupied temperature.
	FAN The fan is turned on.		WARNING SYMBOL Indicates an error is present.
<i>—MODE— Heat</i>	MODE HEAT The heating system is allowed to operate.	<i>HOL</i> 	HOLD Permanently holds the temperature and overrides the schedule.
<i>—MODE— Cool</i>	MODE COOL The cooling system is allowed to operate.	<i>MIN</i>	MIN The floor is at or below the floor minimum temperature.
<i>—MODE— Off</i>	MODE OFF The heating and cooling systems are off.	<i>MAX</i>	MAX The floor has reached the floor maximum temperature.

Mode Button Operation

Press the Mode button to select Heat, Cool, or Off operation. The thermostat must be configured for heat/cool/fan operation in order for the cooling operation to be available.

Heating Operation

Heating is available when the Mode is set to Heat. To change the heat temperature setting, push the Δ or ∇ button to select a preferred temperature setting for the current schedule time period. The Heat On symbol is shown on the display when the thermostat is heating.

To change the temperatures for the other time periods, enter the Set Temp menu by pressing both the Δ and ∇ buttons together, press Menu to locate the Set Temp menu, and press PRGM to enter the menu.

Temperature Sensor Location

The thermostat can operate the heating system based upon either an air temperature sensor, a floor temperature sensor, or a combination of both the air and floor temperature sensors together.

Air Temperature Only

If there is only an air temperature sensor (no floor sensor), the thermostat maintains the desired air temperature.

Floor Temperature Only

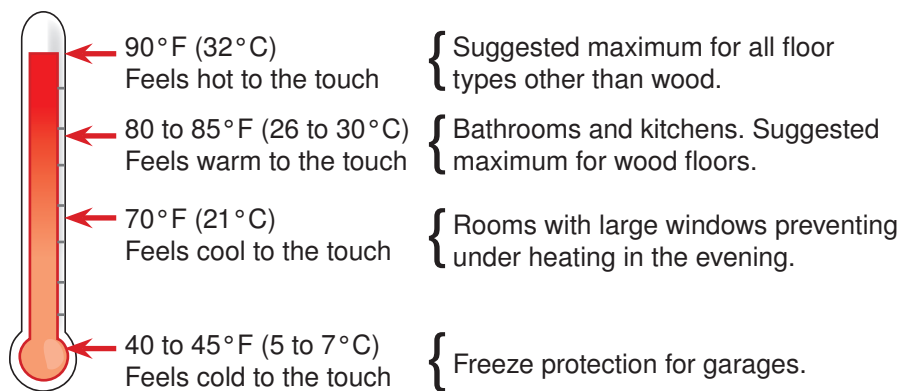
If the air sensor has been disabled, the thermostat will only maintain floor temperature and ignore air temperature. This operation is recommended for areas such as bathrooms to ensure that tile floors are warm to the touch.

Floor and Air Temperature

If the air sensor is turned on and a floor sensor is connected, the thermostat will maintain the desired air temperature as well as a minimum floor temperature.

This operation is recommended for areas with large windows that allow the sun to shine into a room and keep it warm without the need for heat. This can allow the floors to cool off during the afternoon. When the sun goes down, it can take a long time for the floors to get warm again. This may cause the room to cool off too much in the early evening. A floor minimum setting can help with this condition by maintaining a floor minimum temperature. Keep in mind the floor minimum temperature will override the air temperature, and if set too high, may overheat the room.

This operation is also recommended for rooms with hardwood floors. Setting floor minimum and maximum temperatures is a way of enhancing the comfort of the living space while protecting floor coverings.



Cooling Operation

Cooling is available when the Mode is set to Cool. The thermostat must be configured for heat/cool/fan operation in order for the cooling operation to be available.

To change the cool temperature setting, push the Δ or ∇ button to select a preferred temperature setting for the current schedule time period. The Cool On symbol is shown on the display when the thermostat is cooling.

To change the temperatures for the other time periods, enter the Set Temp menu by pressing both the Δ and ∇ buttons together, press Menu to locate the Set Temp menu, and press PRGM to enter the menu.

Hold Operation

The thermostat includes a Hold button. When the Hold button is pressed, the thermostat stops operating based on the programmable schedule and the hold temperature can be set using the Δ or ∇ buttons. Press the Hold button a second time to cancel the hold and resume operating based upon the programmable schedule.

Fan Operation

A fan is available when the thermostat operates a forced air heating or cooling system. The fan can be set to On to allow air circulation through the building. This is useful if the air in the room is stale or if circulating cool air from a basement throughout a home can reduce the temperature in the upper floor without operating the cooling equipment.

Time Clock

The thermostat includes a time clock that is automatically visible in the Home menu when a programmable schedule is used. If the schedule is not used, the user has the option to select whether the time is shown in the Home menu.

During a loss of power, the thermostat continues to keep the correct time and date for at least 4 hours. If the power is off for more than 4 hours, the user will need to set the time.

Programmable Schedule

Energy savings can be achieved by lowering the heating temperature and increasing the cooling temperature when the building is unoccupied or during the night.

When operating on a programmable schedule, a ☀ or a 🌙 symbol is shown in the home menu. The ☀ or 🌙 indicates the current operating temperature.

All schedules are stored in permanent memory and are not affected by a loss of power.

Display	Action
☀	Day temperature
🌙	Night temperature

This thermostat can operate on a programmable schedule in order to automatically lower the room temperature setting. The schedule can be off or on.

The thermostat can support schedules that have either:

- 2 events per day
- 4 events per day

Schedules with four events per day are common for residential use while two events per day are common for commercial installations.

The schedules can be repeated every:

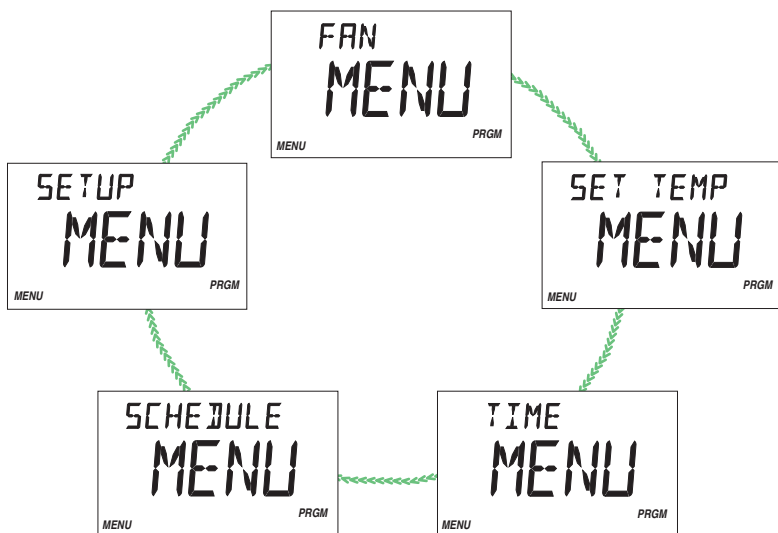
- 24 hours
- 7 days (week)

A 7 day schedule allows a unique time to be set to change the temperature for each day of the week.

The schedule also includes a “SKIP” option that allows the programmable schedule to skip a temperature change and remain at the previous temperature setting. The “SKIP” setting can be found between 11:50 PM (23:50 hours) and 12:00 AM (0:00 hours).

Navigation

Press and hold down both the $\triangle$ and ∇ buttons together to enter the Programming Menus.



While in the Programming Menus, the MODE button changes function to become the MENU button.

Press the MENU button to change from one menu to the next.

While in the Programming Menus, the HOLD button changes function to become the PRGM (program) button.

Press the PRGM button to enter the menu.

While inside a menu, the HOLD button changes to become the ITEM button.

Press the ITEM button to change from one setting to the next.

Fan Menu

FAN

Select if the fan should operate continuously (On) or only together with the heating or cooling equipment (Auto).

Set Temp Menu

SET HEAT ROOM ☼

Set the room heating temperature for the ☼ programmable schedule event.

SET HEAT ROOM ☾

Set the room heating temperature for the ☾ programmable schedule event.

SET COOL ROOM ☼

Set the room cooling temperature for the ☼ programmable schedule event.

SET COOL ROOM ☾

Set the room cooling temperature for the ☾ programmable schedule event.

SET FLOOR ☼

Set the floor heating temperature for the ☼ programmable schedule event.

SET FLOOR ☾

Set the floor heating temperature for the ☾ programmable schedule event.

Time Menu

MINUTES

Set the current time minutes.

HOURS

Set the current time hours.

DAY OF WEEK

Set the current day of the week.

TIME MODE

Select either 12 or 24 hour time format.

CLOCK

Select whether to show the time clock on the display.

Schedule Menu

EVENT 1

The first programmable schedule time period of the day. The ☼ temperature settings are used during this time period.

EVENT 2

The second programmable schedule time period of the day. The ☾ temperature settings are used during this time period.

EVENT 3

The third programmable schedule time period of the day. The ☼ temperature settings are used during this time period.

EVENT 4

The fourth programmable schedule time period of the day. The ☾ temperature settings are used during this time period.

Schedule Menu (continued)

SCHEDULE

Select if the thermostat should change the temperature automatically using a programmable schedule.

EVENT PER DAY

Select either two or four scheduled events per day.

24 HOUR / 7 DAY

Select either a 24 hour or a 7 day repeating schedule.

OPTIMUM START

Select whether or not to use optimum start. The thermostat learns the heat up rate of the room and starts heating in advance of Event 1 or Event 3.

Setup Menu

UNITS

Select the temperature units to be either Fahrenheit or Celsius.

LIGHT

Select when the display back light should operate. Options are Off, Auto or On. Auto operates the back light for 30 seconds after a keystroke.

TYPE

The device type number is 521.

More Information

This User Brochure contains standard information on how to make adjustments to an installed product. More detailed information can be found in this product's Installation and Operation Manual (521_D) at www.tekmarControls.com



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